Building Tribal Partnerships with Low-Cost Small-Footprint Ambient Monitoring Sites

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CASTNET has maintained three tribal partnerships with the Cherokee Nation in Oklahoma (2002), the Alabama-Coushatta Tribe of Texas (2004), and the Santee Sioux Tribe of Nebraska (2006). CASTNET, in 2012, developed a small-footprint, low-power monitoring station that does not require a temperature-controlled shelter. The new type of monitoring station includes a 10-m tower, 3-stage filter pack, pump, MFC (Mass Flow Controller), and telemetry. There have been two tribes, the Kickapoo Nation of Kansas and the Red Lake Band of Chippewa Indians in Minnesota, who have both recently (2013/2014) joined CASTNET as a result of the development of small-footprint, low power monitoring stations (Figure 1). Kickapoo Tribe in Kansas CASTNET site (KIC003) was established December 2013 in Powhattan, Kansas. KIC003 is the most recent tribal site to join CASTNET and collect data. KIC003 is collocated next to a NADP-NTN wet deposition monitoring site (Figure 2). The Red Lake Nation (RED004) site installation will be completed in August 2014.

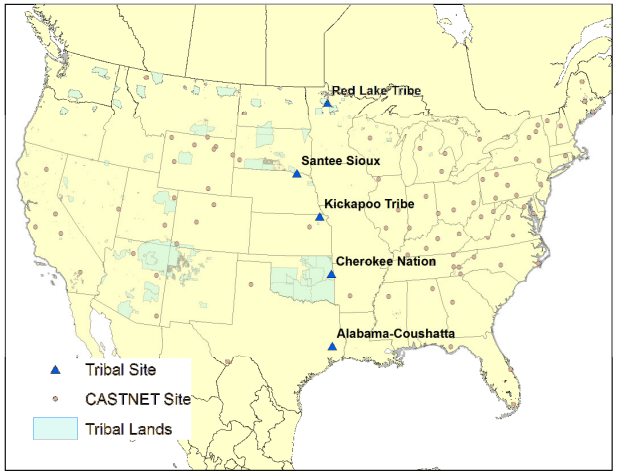

Figure 1: Site Map of Tribal Sites

In the time leading up to KIC003, the Kickapoo tribe (Figure 3) had an increased interest in pollutants in the air. The tribal council then approved the CASTNET site as a way to offer academic learning accessibility to the tribal high school located close to the site as well as to collect data on nitrogen and sulfur species in the ambient air on and near their reservation.

Figure 3: Kickapoo Tribe of Kansas Tribal Seal

Figure 2: KIC003 site picture

Scott Weir, the primary contact for the Kickapoo tribal site, revealed plans for a dedication ceremony once the site is complete and data is collected. He also made a sign for community information and intends to put another sign up in their native Algonquian language. The mock-up sign is located to the left (Figure 4).

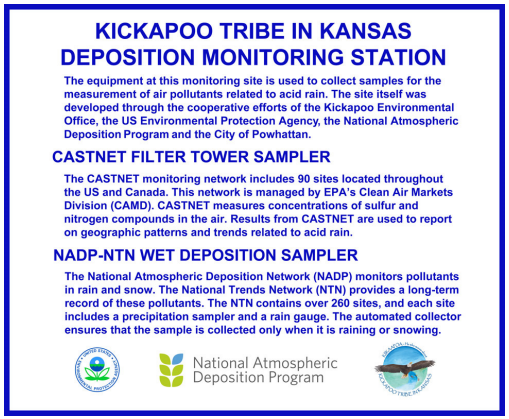

Figure 4: Mock-up sign for KIC003

EPA will continue their outreach efforts to existing tribal partners. Efforts will be expanded to other interested tribes in 2014. CASTNET will develop tools for viewing data, reports on air quality and deposition fluxes in tribal regions, and training documents and Frequently Asked Questions for tribal air monitoring groups.

CASTNET would like to acknowledge Scott Weir for his continuous outreach efforts and dedication to the Kickapoo Tribe of Kansas community.

The Environmental Protection Agency (EPA), in response to the 1990 Clean Air Act Amendments (CAAA), established CASTNET to report on the effectiveness of air pollution control programs. CASTNET began collecting measurements in 1991 with the incorporation of 50 sites from the National Dry Deposition Network which has been in operation since 1987. Today, there are over 90 monitoring stations networked through CASTNET across the United States and in Canada. CASTNET is dependent on the contributions made from several federal, state, and local agencies including the EPA, the National Park Service (NPS), the Bureau of Land Management (BLM), Native American tribes, universities, and other agencies.